



FIG. 1

>huGST-3 (from LifeSeq EST #2617407, ORF is highlighted in capitals)
gaattccattgtgttgggtacggaagacgacagaagggtagaggagaaaagcgcattgg
cccggttagcagtgagcctctcaaaagcagcaggggaagcccaagccacaaggtcttcc
acttcagcacaatgctactgcctaaaaaaATGAAGCTCCTGCTGTTTCTGGTTTCCCA
GATGGCCATCTTGGCTCTATTCTTCCACATGTACAGCCACAACATCAGCTCCCTGTCT
ATGAAGGCACAGCCCGAGCGCATGCACGTGCTGGTTCTGTCTTCCTGGCGCTCTGGCT
CTTCTTTTGTGGGGCAGCTTTTTTGGGCAGCACCCAGATGTTTTCTACCTGATGGAGCC
CGCCTGGCACGTGTGGATGACCTTCAAGCAGAGCACCGCCTGGATGCTGCACATGGCT
GTGCGGGATCTGATACGGGGCCGTCTTCTTGTGCGACATGAGCGTCTTTGATGCCTACA
TGGAACCTGGTCCCCGGAGACAGTCCAGCCTCTTTCAGTGGGAGAACAGCCGGGCCCT
GTGTTCTGCACCTGCCTGTGACATCATCCACAAGATGAAATCATCCCCGGGCTCAC
TGCAGGCTCCTGTGCAGTCAACAGCCCTTTGAGGTGGTGGAGAAGGCCTGCCGCTCCT
ACAGCCACGTGGTGCTCAAGGAGGTGCGCTTCTTCAACCTGCAGTCCCTCTACCCGCT
GCTGAAAGACCCCTCCCTCAACCTGCATATCGTGCACCTGGTCCGGGACCCCGGGCC
GTGTTCCGTTCCCGAGAACGCACAAAGGGAGATCTCATGATTGACAGTCGCATTGTGA
TGGGGCAGCATGAGCAAAAACCTCAAGAAGGAGGACCAACCCTACTATGTGATGCAGGT
CATCTGCCAAAGCCAGCTGGAGATCTACAAGACCATCCAGTCTTGCCCAAGGCCCTG
CAGGAACGCTACCTGCTTGTGCGCTATGAGGACCTGGCTCGAGCCCCCTGTGGCCAGA
CTTCCCGAATGTATGAATTCGTGGGATTGGAATTCTTGCCCCATCTTCAGACCTGGGT
GCATAACATCACCCGAGGCAAGGGCATGGGTGACCACGCTTTCACACAAATGCCAGG
GATGCCCTTAATGTCTCCCAGGCTTGGCGCTGGTCTTTGCCCTATGAAAAGGTTTCTC
GACTTCAGAAAGCCTGTGGCGATGCCATGAATTTGCTGGGCTACCGCCACGTGAGATC
TGAACAAGAACAGAGAAACCTGTTGCTGGATCTTCTGTCTACCTGGACTGTCCCTGAG
CAAATCCACTAAGaggggttgagaaggctttgctgccacctgggtgtcagcctcagtcac
tttctctgaatgcttctgagccttgccctacatctctgagccttaactacatgtctgtg
ggatcacactgagtggtgagttgtgtccacacgtgctcaagcagaaggacttttgtgt
ccatgcttgtgtctagaaaacagactggggaaccttatgtgagcagcacatcccacca
gtgaaacagggtattgctcttcttcttcttcttgatcttctgtctgggcagacttcag
agactttgtggcctggaggcctattaagcacgacacagtatcagtgggaattgatccat
aaacctccctgtccacatcttgcccaatggggaatggatctttcaccaaagagctcac
cagcattttccacagagatgcgaattctgagcccttgaggttcccaatgggattcaag
gaaggaagtgggaacaagggttgatgcctacttatgagcttgaccatacagctatcgg
taatcagaaatatgaaacaaaatctctgacaaaagagcaagctcttaagttcacaagg
tgcttgggcttgatttgaatatcatttccctttgcattttcccattacatagaaaact
ttgacctgtgaaacttgccatctgttaataactaaaattcccaaataagggttctgttta
gaatgtcccttttttatgcttcttaattattagcagtaaatgttcatttttatgggatac
ctaaaaaaaaa



FIG. 2

>huGST-3 (Full length EST Lifeseq #2617407)

MLLPKKMKLLLFLVSQMAILALFFHMYSHNISSLSMKAQPERMHVLVLSSWRSGSSFV
GQLFGQHDPDVFYLMPEAWHVWMTFKQSTAWMLHMAVRDLIRAVFLCDMSVFDAYMEPG
PRRQSSLFQWENSRALCSAPACDII PQDEII PRAHCRLLCSHNPLRWWKRPCRSYSHV
VLKEVRFFNLQVP I PAAERPLNLHIVHLVLDPRSVFRSRERTKGDLMIDSRIVMGQH
EQKLKKEDQPYVVMQVICQSQLEIYKTIQSLPKALQERYLLVRYEDLARAPVAQTSRM
YEFVGLLEFLPHLQTWVHNITRGKGMGDHAFHTNARDALNVSQAWRWSLPYEKVSRLQK
ACGDAMNLLGYRHVRSEQEQRNLLLDLLSTWTVPEQIH

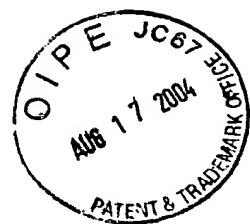


FIG. 3

>msGST-3 from mouse C57Bl/6 BAC clone #87(b15) (ORF is highlighted as capitals)

gggcatcctaacttacacttggtcagacaagacaagcttttgcctacaaaggccacact
ctgtcaggggtgtagaaaggtgtgggtgtggcagaactccctatagtgattaaatgt
gctgggtaggatattctcgggtggtttgatggatgagaaagcccagaggggtgagtttta
aagacttgtaacatagaatgcagtgatccaattaagagccagaattactttgcagagg
gatctggacaaataacttgcaggaatgttttttggtttttgtttgtttgtttgttt
tacattgctccttggtatgggaatccagagaagcccgaaggtagatgctgtaacaacct
aactcagccccatccccctctgcttgctctttcaaggtcttctccttcttccgcaggAT
GATGCTGTTGAAGAAAGGGAGGCTGCTGATGTTCTTGGGTTCCAGGTCATCGTTGTA
GCTCTCTTCATCCATATGTCCGTCCACAGACACCTTTCCAGAGGGAGGAGTCCAGGA
GGCCCGTGATGTGCTGGTGCTGTCTTCTGGCGGTGAGGATCCTCTTTTGTGGGACA
GCTTTTCGGGCAGCACCCGGATGTGTTCTACCTGATGGAGCCTGCCTGGCATGTGTGG
ATGACTTTTACCAGCAGCACAGCCTGGAAGCTGCACATGGCTGTGCGGGATCTTCTGC
GTTCCGTCTTCTGTGTGACATGAGCGTCTTTGATGCCTACATGAACCCAGGCCCCCG
GAAACAGTCCAGCCTCTTCCAGTGGGAGCAAAGCCGGGCCCTGTGCTCAGCGCCTGTG
TGTGACTTCTTCCCTGCCCACGAGATCAGCTCACCCAAGCACTGCAAGCTGCTCTGCG
GTCAGCAGCCCTTTGATATGGTGGAGAAGGCCTGCCGCTCTCACGGCTTCGTGGTACT
CAAGGAGGTGCGTTTTTCTCAGCCTGCAGGCCCTCTATCCACTACTCACGGACCCTTCC
CTCAACCTGCACGTGCTGCACCTGGTCCGAGACCCCCGGGCCGTGTTCCGATCCCGGG
AGCACACCACCATAGAACTCATGGTTGACAGTCATATTGTGCTAGGGCAGCATTTGGA
AACGATCAAGGAGGAAGACCAGCCCTATTATGCCATGAAGATCATCTGCAAAAGCCAG
GTGGACATAGTCAAGGCCATCCAAACCCTCCCTGAAGCTCTGCAGCAGCGCTACCTGT
TCCTGAGGTATGAGGACCTGGTTCGGGCACCCCTGGCCCAGACGACCAGACTATATAA
ATTTGTGGGGTTGGATTTTTTGCCCCACCTCAAACATGGGTTTACAATGTCACCCGC
GGCAAGGGCATGGGTGAGCATGCCCTTCATACTAACGCCAGGAACGCCCTCAACGTCT
CTCAGGCGTGCGTTGGTCCTTACCTTACGAAAAGGTTTCCAGCTTCAAGATGCCTG
CGGTGAGGCTATGGATTTGCTGGGATACCTCCAGGTGAGATCTCAACAAGAACAAGGC
AACCTGTCCCTGGATCTTCTGTCTCTCTCCCATATCTTGGGGCAGGTCTTCCGAGAAG
GTTAAggaggtctgtctgcaccccttggttccagccttagtcaccattaaacgcacag
aagccttaaggtataaccaaactgagtgcccttttctcctcagccccaagcagagggg
tctttgtgtctatactcatgtctaccctacaactgagcctaaaaagccaagaaacagt
atctttctgtcttgaaaatacttaggaaccttaagcagccctttgacctgtcaagca
agactttcttgtaaccttggccttcttacctgtgcataccttgagagactcgggtctgga
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atcttttctaag

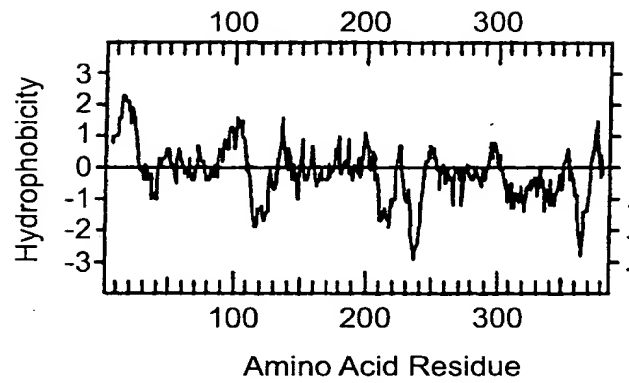


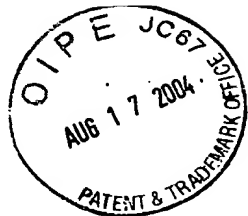
FIG. 4

>msGST-3 translation of ORF from mouse C57Bl/6 BAC clone #87(b15)
MMLLKKGRLLMFLGSQVIVVALFIHMSVHRHLSQREESRRPVHVLVLSSWRSGSSFVG
QLFGQHPDVFYLMPEPAWHVWMTFTSSTAWKLHMAVRDLLRSVFLCDMSVFDAYMNP GP
RKQSSLFQWEQSRALCSAPVCDFFP AHEISSPKHCKLLCGQQPFDMVEKACRSHGFVV
LKEVRFLSLQALYPLLTDPSLNLHVHLVRDPRAVFRSREHTTIELMVD SHIVLGQHL
ETIKEEDQPYYAMKIIICKSQVDIVKAIQTLPEALQQRYLFLRYEDLVRAPLAQTTRLY
KFVGLDFLPHLQTWVYNVTRGKGMGQHAFHTNARNALNVSQAWRWSLPYEKVSQ LQDA
CGEAMDLLGYLQVRSQQEQGNLSLDLLSSSHILGQVFREG



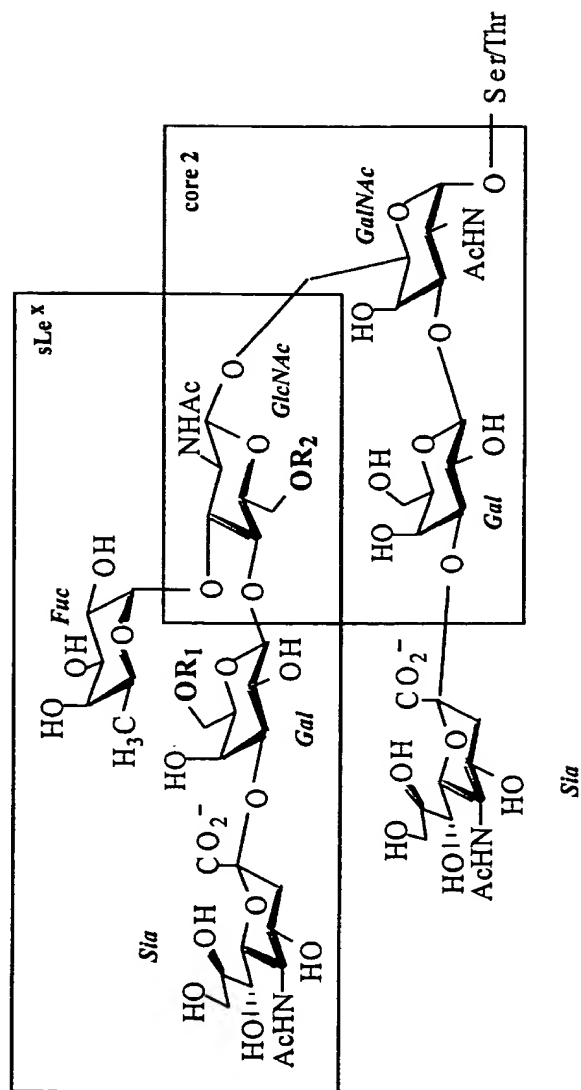
FIG. 5





	106		134																		
HEC-GlcNAc6ST	SW	RS	GSSSFVGLFGLHPDVFYLM	EP	A	W	H	V													
GlcNAc6ST	TW	RS	GSSSFGLFNQNP	VF	FL	Y	E	P	W	H	V										
KSGal6ST	TT	RS	GSSSFVGLFNQHLD	VF	YL	F	E	P	L	Y	H	V									
C6ST	TT	RT	GSSSFVGEFFNQGN	I	F	Y	L	F	E	P	L	W	H	I							
	249		270																		
HEC-GlcNAc6ST	DP	SL	N	L	H	I	V	H	L	V	R	D	P	R	A	V	F	R	S	R	
GlcNAc6ST	DP	AL	D	L	K	V	I	H	L	V	R	D	P	R	A	V	A	S	S	R	
KSGal6ST	DP	R	I	N	I	K	V	L	O	L	V	R	D	P	R	G	I	L	A	S	R
C6ST	DP	R	I	D	L	R	V	I	O	L	V	R	D	P	R	A	V	L	A	S	R
	320		339																		
HEC-GlcNAc6ST	PK	AL	Q	E	R	Y	L	L	V	R	Y	E	D	L	A	R	A	P	(SEQ ID NO: 16)		
GlcNAc6ST	PD	W	L	O	G	H	Y	L	V	R	Y	E	D	L	V	G	D	P	(SEQ ID NO: 17)		
KSGal6ST	PP	W	L	K	G	K	Y	M	L	V	R	Y	E	D	L	A	R	N	P	(SEQ ID NO: 18)	
C6ST	PA	W	L	R	G	R	Y	M	L	V	R	Y	E	D	V	A	R	G	P	(SEQ ID NO: 19)	

FIG. 6



$\text{R1} = \text{H}, \text{R2} = \text{SO}_3^- : 6\text{-sulfo sLe}^x$

$\text{R1} = \text{SO}_3^-, \text{R2} = \text{H} : 6'\text{-sulfo sLe}^x$

$\text{R1} = \text{R2} = \text{SO}_3^- : 6',6\text{-disulfo sLe}^x$

FIG. 7

FIG. 8

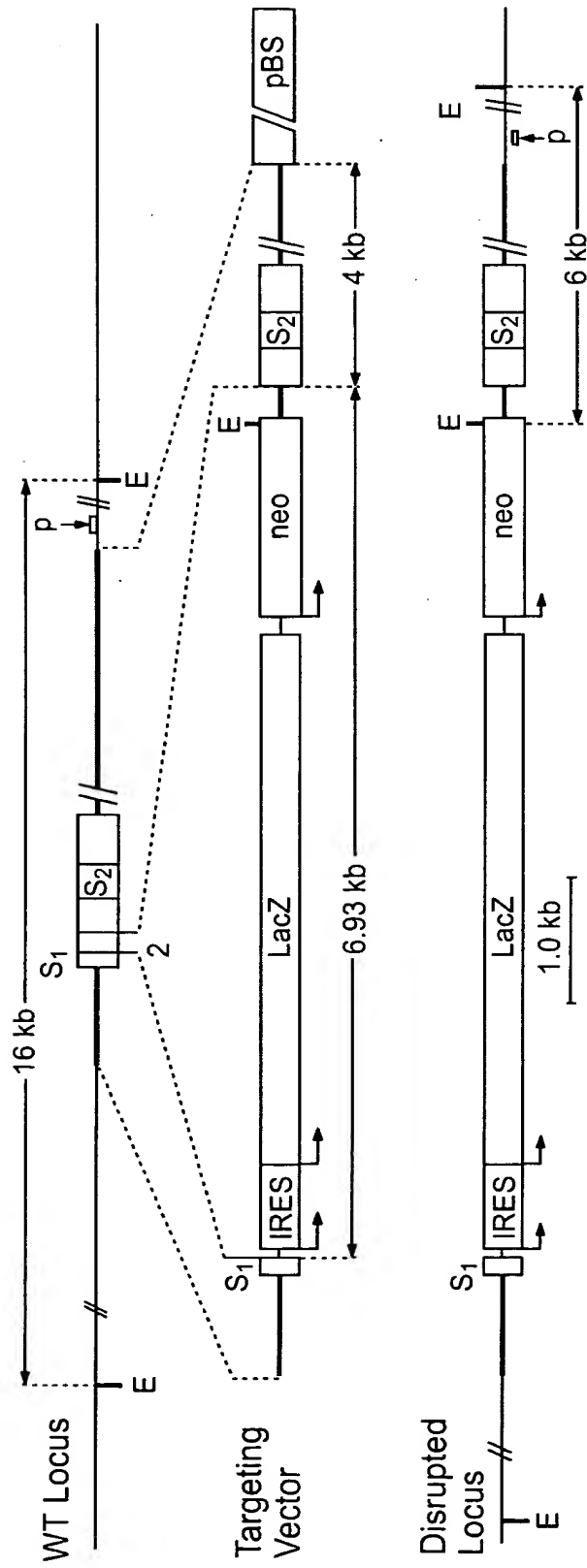


FIG. 9A

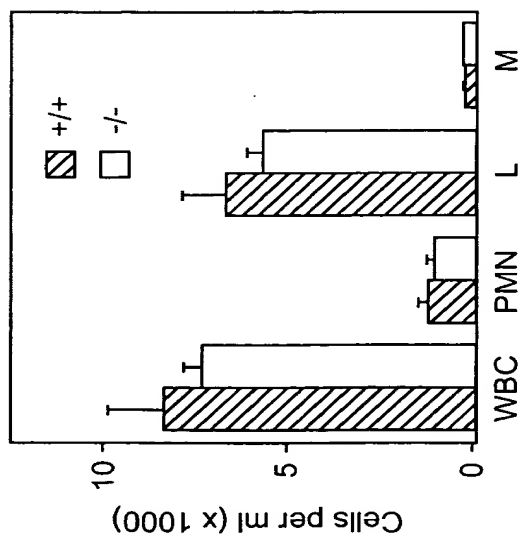


FIG. 9B

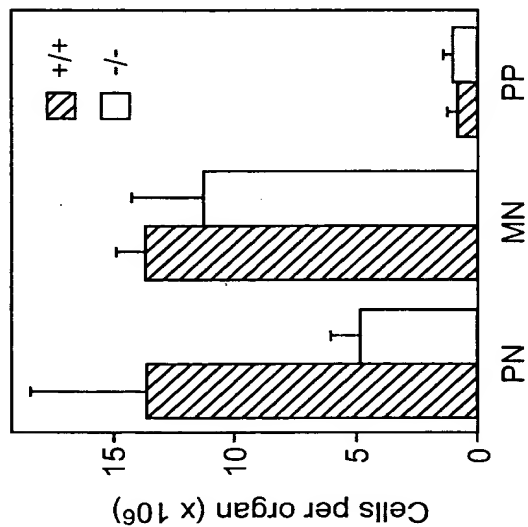
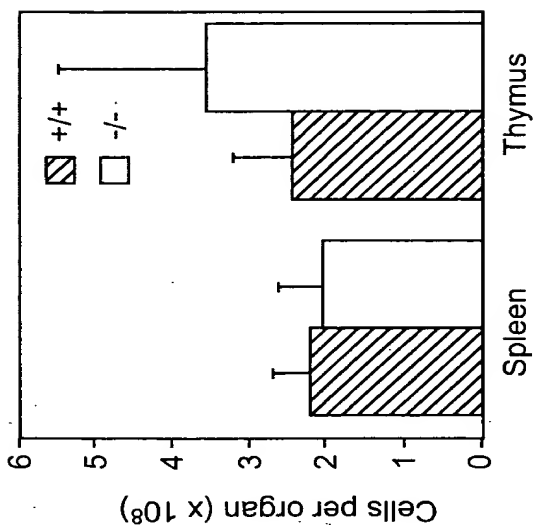


FIG. 9C



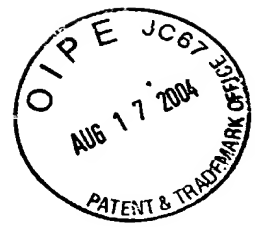
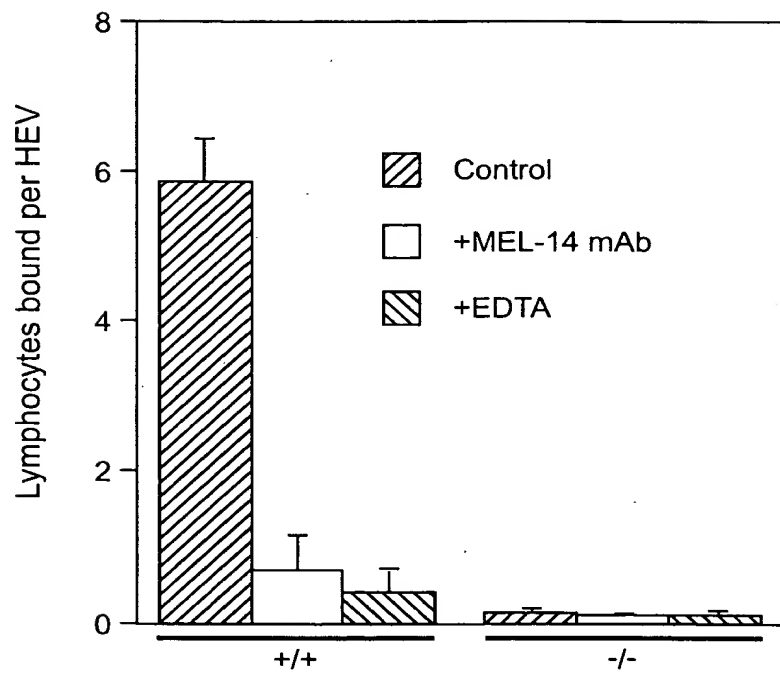


FIG. 10



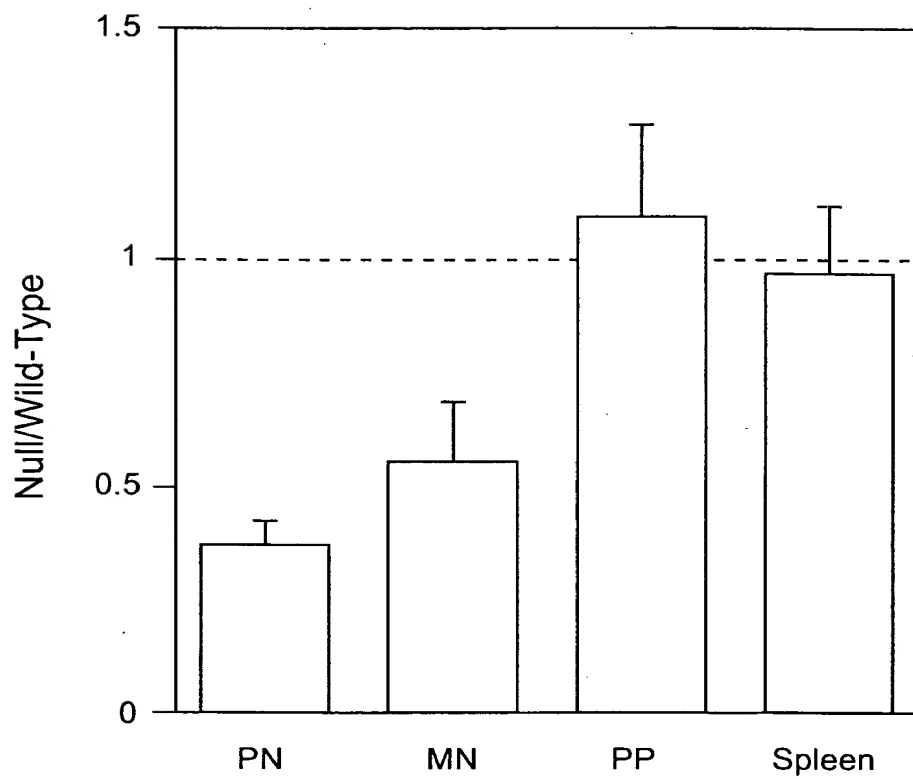
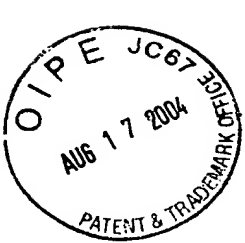


FIG. 11